

MATERIALS SCIENCE & ENGINEERING 554

NONWOVENS SCIENCE AND TECHNOLOGY II

Spring 2004

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MSE 554 - NONWOVENS SCIENCE AND TECHNOLOGY II: Inter-relations between mechanics of production and mechanical properties of nonwoven fabrics; characterization of fiber morphology and web structure; chemistry of nonwoven binders and finishes; and engineering of specific fabric properties. Emphasis on the advances in the technology of nonwovens, comparison of the various modern production techniques and their special advantages and disadvantages.

Students:

- Atul Dahiya
- M. G. Kamath
- Raghavendra R. Hegde
- Jihua Xiao (Regina)

Semester Project (Spring 2004): To update the original website with the developments in the recent years on polymers and fibers for nonwovens, formation of nonwovens, finishing and bonding, and applications of the nonwovens. This is compiled by the students in this semester.

ORIGINAL WEBSITE

This website was originated in Fall 1999 by Dr. Kermit Duckett, Professor of Textile Science while teaching the former course on "Nonwovens Science & Technology II".

Original Students:

- Xiao Gao
- Hsu-Yeh Huang
- Praveen Kumar Jangala
- Monika Kannadaguli
- Ramaiah Kotra
- Haoming Rong

FIBERS FOR NONWOVENS

Introduction to Nonwovens

Fibers and Fiber Consumption in Nonwovens

Polyester Fibers

Olefin Fiber

Rayon Fibers

Nylon Fibers
Carbon Fibers
Cotton Fibers
Bicomponent Fibers

FORMATION OF NONWOVENS

Dry-laid Nonwovens
Wet-laid Nonwovens
Melt Blown Technology
Spunbond Technology
Nanofiber Nonwovens

FINISHING AND BONDING

Finishing of Nonwoven Bonded Fabrics
Chemical Bonding
Needle Punched Nonwovens
Spunlace
Thermal Bonding
Absorption Properties

GEOTEXTILES

TESTING METHODS IN NONWOVENS